

## Missouri Department of Natural Resources

# Total Maximum Daily Load Information Sheet

## Pleasant Hill Lake

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### Waterbody Segment at a Glance:

**County:** Cass  
**Nearby Cities:** Pleasant Hill, Greenwood,  
Lee's Summit  
**Area of impairment:** 115 acres  
**Pollutant:** Chlordane  
**Source:** Unknown



State map showing location of watershed

**Note:** This lake was delisted from the 2002 303(d) List

**TMDL Priority Ranking:** TMDL Approved 2001

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### Description of the Problem

#### Beneficial uses of Pleasant Hill Lake

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health associated with Fish Consumption
- Boating and Canoeing
- Drinking Water Supply

#### Use that is impaired

- Protection of Human Health associated with Fish Consumption

#### Standards that apply

The current standard for chlordane in fish tissue, established by the U.S. Food and Drug Administration (FDA), is 0.3 milligrams per kilogram (mg/kg). Note: 1 kilogram = 2.2 pounds.

#### Background Information and Water Quality Data

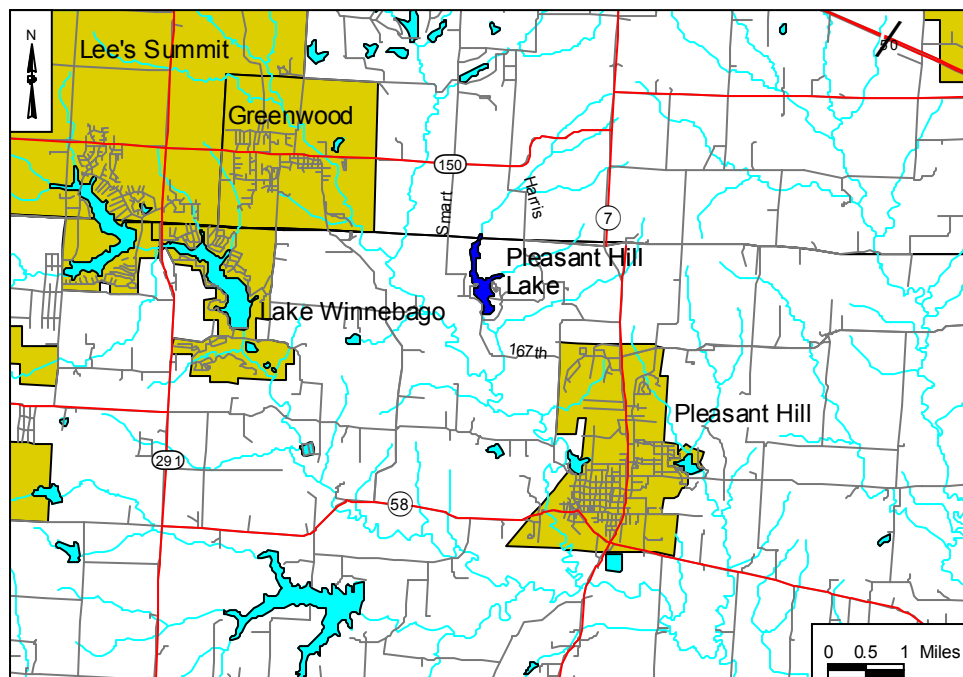
Pleasant Hill Lake is a small, rural lake that was impounded in 1948 for use as a drinking water supply for the town of Pleasant Hill. Although it is still listed with drinking water as a beneficial use, it has not been used for drinking water supply since 1974, when Pleasant Hill signed a contract to get its water from Lee's Summit.

Chlordane is a pesticide that was commonly used in the past for termite control. It was also used at plant nurseries, golf courses and in agriculture. Chlordane was banned from agricultural uses in 1975 and all other uses in 1988, but it degrades very slowly in the environment and bio-accumulates in fish tissue, particularly bottom-feeding fish. This is because chlordane is not soluble in water, but binds to the soil. The highest levels found in Pleasant Hill Lake occur in carp. Human exposure to chlordane has been associated with liver cancer and nervous system disorders. In the years since chlordane has been banned, chlordane levels in fish tissue from fish in Pleasant Hill Lake have

declined. The best course of action in most waters is to leave the contaminated sediments in place and allow them to continue to degrade naturally over time. In lakes, the accumulation of newer sediment uncontaminated or less contaminated by chlordane tends to cover the older more contaminated sediments and reduces the exposure of fish and other aquatic life in the lake to chlordane.

In 1985, the Missouri Department of Conservation issued a fish consumption advisory for bottom-feeding fish in Pleasant Lake. This was discontinued July 9, 2001, because chlordane levels in these fish have fallen below the FDA action level of 0.3 mg/kg. The TMDL recommends continued monitoring of chlordane levels in fish in Pleasant Hill Lake. The U.S. Environmental Protection Agency approved this TMDL November 19, 2001. Data and a map of the area are found below.

### Pleasant Hill Lake in Cass County, Missouri



### Chlordane Concentration in Fish Tissues in Pleasant Hill Lake (mg/kg)

Year	Carp	Channel Catfish	Largemouth Bass
1989	1.51	0.255	
1998	0.17		0.015
2000	0.11		0.015

Sources: Missouri Dept of Conservation, Missouri Department of Natural Resources, U.S. Environmental Protection Agency

#### For more information call or write:

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